

XII.—*The First Eremochetous Dipteron with Vestigial Wings.* By Prof. M. BEZZI, Turin, Italy.

IN my paper on the reduction and disappearance of the wings in the Diptera* I have pointed out the fact that this phenomenon is very rare in the suborder of the Diptera Brachycera. In a total of 384 cases observed (adding to my list on pp. 165–182 those appended at end of the present paper), we have the following figures:—

Suborder Orthorrhapha Nematocera . . .	140
Orthorrhapha Brachycera . . .	12
Cyclorrhapha Athericera . . .	232

And even the few species of the Brachycera are represented exclusively by some Empididæ and Dolichopodidæ, both belonging to the same group of the Orthogenya (Microphona). All the other groups of the suborder are exempt (the Hypocera being placed with the Cyclorrhapha); in the Energopoda there are a few Asilidæ in which the wings show a tendency towards reduction both in the size and in venation, but these cases seem to be unworthy of consideration. It was therefore with the greatest interest that I received, some months ago, through the courtesy of Dr. Charles P. Alexander, Urbana, Ill., U.S.A., two specimens of a subapterous Dipteron from Tasmania, sent to him with a collection of Tipulidæ. On a superficial examination the insect is indeed very like a wingless female of the genus *Tipula*, of which there are numerous cases in all parts of the world. It was first believed to be a Bibionid or a Rhagionid (Leptid), but at once I recognized in it a Chironomyzid, judging it to be a wingless female of some Australian species of *Chironomyza* or of *Metoponia*.

In the meantime, a paper † by Mr. G. H. Hardy, of the Australian Museum, Sydney, N.S.W., has appeared, in which an insect almost identical is described as a new genus and species under the name of *Boreoides subulatus*, with the interesting notice that it has been preserved for many years in the Melbourne Museum under the MS. name of *Boreomyia subulata*, Walker. The genus is considered to be nearly allied to *Chironomyza*. I am also of the same opinion. The atrophied mouth-parts, the form of the head and antennæ, the

* "Riduzione e scomparsa delle ali negli Insetti Ditteri," *Rivista di Sci. Nat.* "Natura," Milano, vol. vii. 1916, pp. 85–182, 11 figs.

† "A Revision of the Chironomyzini (Diptera)," *Proc. Linn. Soc. N.S.W.* xlvi. 1920, pp. 532–542, pls. xxix., xxx.

greatly developed and bisected front coxæ, the subulate abdomen of the female with the last segments ovipositor-like, are as in the South-American forms of *Chiromyza*, in which there is also a great difference of size in the sexes*.

It is important to notice that this first Stratiomyiid with vestigial wings is so advanced in wing-reduction, being nearly apterous and with the posterior part of the thorax undeveloped. It seems to be not rare in New South Wales and Victoria, the times of appearance being February, March, and May; most specimens have been found in the mountains.

In my opinion the Australian species of *Chiromyza* belong to a genus different from the true South-American one, the third longitudinal vein being typically forked (even if Mr. Hardy has shown the variability of this character) in Australian species, while it is typically simple in the American ones. In this case the name *Boreoides* can be used for the Australian *Chiromyza*'s, even for those with normally winged females. The apterous condition of the female sex only is not of generic value, as shown, for example, by the genus *Tipula*.

In a recent paper by Dr. G. Enderlein ("Ueber die phyletisch älteren Stratiomyidensubfamilien," in *Mittel. Zoolog. Mus. Berlin*, x. 1921, pp. 153-214) a new genus *Archimyza* was erected for what seems to be the species described and figured by Hardy under the name of *Chiromyza australis*, Macquart.

In comparing the two Tasmanian specimens before me with the figures and descriptions of the type-species *subulatus*, I have found some differences of great value, and it seems better to separate them as a new form, although on p. 541 of his paper Mr. Hardy says:—"Specimens from Tasmania taken on the summit of Mt. Wellington, and one taken by Mr. C. E. Cole near Bellerive, Hobart, undoubtedly belong to this species, but unfortunately they are not available for study at the time of writing this paper."

Boreoides tasmaniensis, sp. n., ♀. (See figure.)

Type-female and an additional specimen of same sex in the South Australian Museum from Hobart, Tasmania (*Lea*).

Length of body 16-17 mm.

Agreeing with Hardy's description and figure of *subulatus* female, but differing in the following points:—

(a) The third antennal joint has the annulation very distinct and deep, being divided into three parts.

* Several pairs of *Chiromyza fuscana*, Wied., from Paraguay in my collection, taken *in copula* by Mr. Schrottky, measure 8-9 mm. in length in the males and 15-17 mm. in the females.

(b) There is no distinct scutellum; the back of the mesonotum presents only indistinct furrows close to its posterior border, from which the scutellum or the metanotum cannot be recognized. This is well shown in the photograph.

(c) In consequence of this reduction of the distal part of the thorax the posterior coxæ are placed in contact with the intermediate ones.

(d) The rudiments of the wings are well developed, being much more than "minute prominences." In the type-specimen they are 2 mm. long, and have a stalk-like basal part and a dilated terminal portion. The rudiments of the halteres are less developed.

(e) The back of the mesonotum has a distinct pattern, being reddish yellow, with a broad, longitudinal, complete



Boreoides tasmaniensis, sp. n., ♀. Hobart, Tasmania: type and co-type in South Australian Museum. Enlarged photo. by Rag. A. Lucchetti, Turin.

blackish stripe, which ends in front of the first posterior furrow. The abdominal pattern, when distinguishable, is the same as in *subulatus*.

Additional Note.—Since this was written, I have received, through the courtesy of Mr. Hardy, a female paratype of his *Boreoides subulatus*. Comparing this specimen with the type of *Bor. tasmaniensis*, I have found that the differences in the annulation of third antennal joint and in the position of hind coxæ are not constant, being similar in the two species. On the other hand, there are very important differences in the shape of scutellum, in the length of wing-rudiments, and in the coloration of the back of mesonotum. I find, moreover, that the legs of *tasmaniensis* are considerably more thin and

slender than those of *subulatus*; in this latter species the hind tarsi are distinctly thickened, while in *tasmaniensis* they are thin. The colour of the legs is, moreover, much lighter in *tasmaniensis*, the tibiæ and tarsi being entirely yellowish, while in *subulatus* they are mainly black.

ADDITIONS TO MY CATALOGUE OF THE DESCRIBED DIPTERA WITH REDUCED OR ABORTED WINGS.

Most of the following species have been described subsequently to the preparation of my paper of 1916, or, owing to the war, have not come to my knowledge; a few of the older records have been previously overlooked by me.

With the following 45 additions the number of cases observed (corresponding exclusively to degrees 3-8 of my gradation, pp. 99-110) amounts to 384.

I. ORTHORRHAPHA NEMATOCERA (140).

Fam. Tanyderidæ (1).

3. *Protoplasa vanduzeei*, Alexander, Ent. News, xxix. p. 285 (1918).—California.

Fam. Tipulidæ (28).

3. *Tipula variipennis*, Meigen, Syst. Besch. i. p. 183 (1818).—Europe.
3. *T. luteipennis*, Meigen, Syst. Besch. vi. p. 288 (1830).—Europe.
5. *T. gynaptera*, Alexander, Journ. N.Y. Ent. Soc. xxvi. p. 72 (1918).—Siberia.
5. *T. rothschildi*, Alexander, Bull. Mus. Paris, 1920, p. 318 (1920).—Abyssinia.
5. *T. imperfecta*, Riedel, Voy. All-Jeann., Dipt. iii. p. 94 (1914).—Kilimandjaro, Africa.
5. *T. chionoides*, Alexander, Ann. S. Afr. Mus. xvii. p. 164, fig. 2 (1917).—South Africa.
4. *T. subapterogyne*, Alexander, Ann. Ent. Soc. Amer. xiii. p. 266 (1920).—Formosa.
5. *T. whitneyi*, Alexander, Journ. N.Y. Ent. Soc. xxvi. p. 73 (1918).—Pribilof Islands.
4. *T. abortiva*, Alexander, Ent. News, xxv. p. 358 (1914).—Peru.
6. *Longuro micropteryx*, Alexander, Ann. S. Afr. Mus. xviii. p. 217 (1921).—South Africa.

Fam. Limoniidæ (30).

4. *Tricyphona hannai*, Alexander, Can. Ent. 1917, p. 209.—Pribilof Islands.
3. *Tr. degenerata*, Alexander, Can. Ent. 1917, p. 207.—Colorado, U.S.A.
3. *Gynoplistia bona*, Alexander, Ins. Insc. menstr. 1920, p. 123.—New Zealand.
3. *Linnophila rhinoptiloides*, Alexander, Can. Arct. Exped. 1919, p. 6c (1919).—N.W. Arctic Territories.

4. *L. subaptera*, Alexander, Can. Ent. 1917, p. 207; and Proc. Cal. Acad. Sci. x. p. 38 (1920).—California.
5. *Platylimnobia barnardi*, Alexander, Ann. S. African Mus. xvii. p. 150, fig. 1 (1917).—South Africa.
5. *Plat. pumila*, Alexander, Ann. S. African Mus. xviii. p. 196 (1921).—South Africa.
4. *Erioptera* sp., Riedel, Voy. All.-Jean., Dipt. iii. p. 83 (1914).—Kilimandjaro, Africa.
8. *Chionca primitiva*, Alexander, Can. Ent. 1917, p. 204.—New York, U.S.A.
8. *Ch. gracilis*, Alexander, Can. Ent. 1917, p. 206.—New York, U.S.A.
8. *Ch. noveboracensis*, Alexander, Can. Ent. 1917, p. 205.—New York, U.S.A.

Fam. **Scatopsidæ** (2).

3. *Coboldia formicarum*, Melander, St. Coll. of Wash., Bull. 130, p. 17, pl. i. fig. 4 (1916).—Wisconsin, U.S.A.

Fam. **Sciaridæ** (32).

8. *Epidapus absoloni*, Czizek, Wien. ent. Zeit. xxxiv. p. 374 (1915).—Europe.
8. *Iandrockia moravica*, Czizek, Wien. ent. Zeit. xxxvi. p. 290, fig. (1917).—Europe.
4. *Sciara heteroptera*, De Meijere, Tijdschr. v. Entom. lvi. p. 318 (1913).—Java.

II. ORTHORRHAPHA BRACHYCERA (12).

Fam. **Stratiomyidæ** (2).

6. *Boreoides subulatus*, Hardy, Proc. Linn. Soc. N.S.W. xlv. p. 540, pl. xxx. figs. 17-22 (1920).—Australia.
6. *Bor. tasmanicus*, Bezzi, described in the present paper (1922).—Tasmania.

Fam. **Empididæ** (8).

8. *Pieltainia iberica*, Arias, Bol. Soc. Esp. Hist. Nat. 1919, p. 479, figs. 1-12.—Spain. This is the undetermined genus and species of the first list.
5. *Geodromia subaptera*, Arias *in litt.* (1920).—Spain.

III. CYCLORRHAPHA ATHERICERA (232).

Fam. **Phoridæ** (85).

8. *Ptochomyia afra*, Silvestri, Bull. Lab. Zool. Portici, xiv. p. 275, figs. iii.-ix. (1921).—Cameroon, Africa. With the var. *parriceps* (Nigeria) and *laticeps* (French Guinea).
8. *Chonocephalus jamaicensis*, Brues, Psyche, xxii. p. 102 (1915).—Jamaica.
8. *Stethopathusa corporaali*, Schmitz, Bol. Soc. ent. España, 1921, p. 96, fig.—Sumatra*.

* In this same paper Schmitz has the two new genera *in litt.*, *Neopuliciphora* and *Aptinandria*, this last with both the sexes apterous.

Fam. **Borboridæ** (15).

4. *Leptocera* (*Scotophilella*) *pseudonivalis*, Dahl, Sitzber. Ges. naturf. Freunde Berlin, 1909, p. 369; Duda, 1918.—Europe.
4. *Lept.* (*Puncticorpus*) *brevipennis*, Duda, Abhandl. zool.-bot. Ges. Wien, x. p. 93, pl. vi. fig. 17 (1918).—Germany*.

Fam. **Drosophilidæ** (2).

3. *Drosophila notabilis*, Lamb, Trans. Linn. Soc. London, 1914, p. 329, fig. 16.—Seychelles Islands.
3. *Oxycamilla acutipennis*, Loew, Berl. ent. Zeitschr. ix. p. 269 (1865).—South Europe, Mediterranean countries.

Fam. **Oscinidæ** (6).

4. *Neuropachys brachyptera*, Thalhammer, Mem. Ann. Soc. Sci. Bruxelles, xxxvii. p. 342 (1913).—Belgium.
6. *Myrmecosepsis hystria*, Kertész, Ann. Mus. nat. Hung. xii. p. 244, figs. 1-2 (1914).—Formosa.

Fam. **Geomyzidæ** (5).

3. *Mutioptera apicalis*, Meigen, Syst. Besch. vi. p. 109 (1830); *terminalis*, Zetterstedt, Dipt. Scand. vi. p. 2533 (1847).—North and Middle Europe.
4. *Mut. alhuandi*, Hendel, Deutsch. entom. Zeitschr. 1917, p. 39, fig. 3.—Kilimandjaro, Africa. In this same paper, p. 39, Hendel has changed the name of the North-American *Mut. apicalis*, Coquillett, to *Mut. coquilletti*, Hendel.

Fam. **Ortalidæ** (1).

3. *Stenerctma laticauda*, Loew, Mon. N.A. Dipt. iii. p. 187 (1873).—Texas, U.S.A.

Fam. **Hippoboscidæ** (30).

7. *Lipoptena pauciseta*, Edwards, Journ. Fed. Malay St. Mus. viii. p. 55, figs. 27, 28 (1919).—Sumatra.

Fam. **Nycteribiidæ** (58).

8. *Penicillidia corynorhini*, Ferris, Ent. News, xxvii. p. 435, pl. xxiii. fig. 3 (1916).—U.S.A.
8. *Pen. majuscula*, Edwards, Journ. Fed. Malay St. Mus. viii. p. 58 (1919).—Sumatra.
8. *Eremoctenia progressa*, Muir, Bull. Mus. Zool. Harvard, liv. p. 351, pl. ii. figs. 8, 10 (1912); Scott, 1917.—Amboina.
8. *Basilis silvæ*, Brèthes, Bol. Mus. nacion. 1913, p. 1.—Chile.

* *Leptocera paradoxa*, Stenhammar, is considered by Duda, 1918, as a synonym of *Pteremis nivalis*, Hal.